PDB50

ASSESSING THE INFLUENCE OF INCORPORATING SECONDARY CARDIOVASCULAR EVENTS INTO A TYPE 2 DIABETES MELLITUS (T2DM) COST-EFFECTIVENESS MODEL

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OBJECTIVES: Cost-effectiveness assessments in T2DM are commonly based on models that predict only primary cardiovascular events. This study aimed to assess the implications of incorporating secondary cardiovascular events on predicted cost-effectiveness. **METHODS:** Routine UK hospital data, between 2000 and 2005, were analyzed to quantify the cumulative incidence of first, second and third myocardial infarction (MI) or stroke events in T2DM subjects. Adjustments were made for out of hospital mortality and under-diagnosis of T2DM. Cardiovascular risk equations, used in a previously published cost-utility model, were re-calibrated, using the ratio of primary plus subsequent event to primary event, to predict subsequent MIs and strokes consistent with the observed UK data. The cost-effectiveness analysis compared two treatment strategies: A: 1st line metformin; 2nd line DPP-4 inhibitor add-on; 3rd line sulphonylurea add-on. B: 1st line metformin; 2nd line sulphonylurea add-on; 3rd line thiazolidinedione add-on. **RESULTS:** Of the 1,124,846 T2DM patients identified, 55,868 and 65,436 experienced primary MI and stroke events, respectively. There were 2159 (3.86%) and 185 (0.003%) second and third MI admissions, and 5808 (8.88%) and 755 (0.012%) second and third stroke admissions, respectively. Modelled risk multipliers of 1.04 for MI and 1.1 for stroke were required to predict cumulative incidence consistent with the UK data. Incorporating subsequent events had little impact on the cost-utility analysis with the ICER decreasing from £3129 to £3105 per quality adjusted life-year. More noteworthy, was the impact on cost per life-year gained, which decreased from £257,902 to £90,055, with subsequent events included. **CONCLUSIONS:** The inclusion of subsequent cardiovascular events in models of T2DM provides greater face validity but has little impact upon cost-effectiveness. Thus, economic assessments of therapies that modify glycaemic control, using models that do not incorporate subsequent MI and stroke events, are not significantly biased.

PDB51

COST-EFFECTIVENESS OF EXENATIDE VERSUS INSULIN GLARGINE AND VERSUS BIPHASIC INSULIN ASPART FOR THE TREATMENT OF TYPE 2 DIABETES IN PORTUGAL: A LONG-TERM HEALTH ECONOMIC ANALYSIS

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OBJECTIVES: Two recent multicenter, comparator-controlled, open-label, randomized, parallel group clinical trials comparing exenatide with insulin glargine and with biphasic insulin aspart provided evidence of the short-term clinical profile of exenatide. The objective of this cost-effectiveness analysis was to use these results as the basis for long-term projections to estimate the clinical and economic outcomes associated with exenatide treatment versus insulin glargine and versus biphasic insulin aspart in Portuguese health care setting. **METHODS:** The previously published and validated IMS Core Diabetes Model was used to project the long-term clinical and cost outcomes for a cohort defined as the intention-to-treat (ITT) population of patients in the H8O-MC-GWAA and H8O-MC-GWAD clinical trials having a baseline BMI ≥ 35 kg/m2. Portuguese-specific direct medical costs data were used in the analysis to model outcomes over a 35-year time horizon from the National Health Service perspective. **RESULTS:** Exenatide was associated with ICERs of €61,637 per life-year gained and €17,222 per QALY gained versus biphasic insulin aspart. Exenatide was also associated with ICERs of €53,275 per life-year gained and €14,697 per QALY gained versus insulin glargine from the National Health Service perspective. Results from 18 sensitivity analyses and two BMI subgroup analyses indicated a limited impact of baseline BMI on the final results. Results were sensitive to disutilities applied for excess BMI and nausea. Results were also sensitive to assumed insulin daily doses (IU) for insulin glargine and biphasic insulin aspart after the first year. **CONCLUSIONS:** The outcomes of this CEA and CUA were that exenatide has been projected to improve life expectancy and quality-adjusted life expectancy compared to both insulin glargine and to biphasic insulin aspart in patients with type 2 diabetes failing OADs. Based upon these results exenatide could be considered good value for money in Portugal regardless of baseline BMI levels.

PDB52

LONG-TERM COST-EFFECTIVENESS OF LIRAGLUTIDE VS. ROSIGLITAZONE IN THE CZECH REPUBLIC

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OBJECTIVES: To assess the long-term cost-effectiveness of treatment with liraglutide on top of standard therapy with glimepiride (SU) compared with rosiglitazone in people with type 2 diabetes. **METHODS:** The extensively published and validated CORE Diabetes Model was populated with the clinical data from LEAD-1 trial: liraglutide + SU vs. rosiglitazone + SU. The analysis was performed from the Czech health care services payer's perspective. a 20-year time horizon was chosen to reflect the costs and outcomes of diabetes as these are often only seen in the later stages of the disease. The analysis used health state utility values from published sources to assess the effect of treatment on QALYs. The unit costs of treatment and complications were derived from published sources or based on expert opinion survey and official tariff lists for health care services paid by public payer (insurance company). All figures are shown in CZK and EUR (100 CZK = 3.94 EUR). **RESULTS:** QALYs increased with liraglutide 1,2 mg + SU vs. SU + rosiglitazone 4 mg by 0.236. Total direct costs increased by CZK 45,679 (€1800) resulting in incremental costs per QALY of CZK 193,468 (€7623). The incremental cost-effectiveness ratio for liraglutide 1.8 mg + SU vs. SU + rosiglitazone 4 mg was estimated at CZK 378,762 (€14,923) per QALY gained (QALYs increased by 0.270). Total costs (including indirect costs) increased by CZK 44,028 (€1735) and CZK 100,301 (€3952) resulting in an incremental cost per QALY gained of CZK 186,475 (€7347) and CZK 371,188 (€14,624), respectively. **CONCLUSIONS:** Treatment with liraglutide added to a sulphonylurea is a cost-effective intervention compared with adding rosiglitazone and is likely to represent good value for money in the Czech Republic setting.

PDB53

COST-EFFECTIVENESS OF PREGABALIN VERSUS USUAL CARE IN REFRACTORY OUT-PATIENTS WITH PAINFUL DIABETIC PERIPHERAL NEUROPATHY (PDPN) FOLLOWED IN PRIMARY CARE SETTINGS

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OBJECTIVES: Estimate the cost-effectiveness (CE) of Pregabalin (PGB) and Usual Care (UC) in refractory outpatients with pDPN treated in usual medical practice in Primary Care settings in Spain. **METHODS:** Data extracted from a 12-week non-interventional study were used in the CE analysis. Previously, PGB naïve patients treated with UC or PGB, matched by age (+5 years), sex and pain intensity (+5 pts), refractory (≥40 VAS-MPQ) to previous treatment were selected. Patients could switch to PGB (monotherapy/add-on) or to UC other than PGB. Time horizon was 12 weeks. Effectiveness was expressed as quality-adjusted life-years (QALY) gain. The CEA included the perspectives of the NHS and society (2006), with results expressed as incremental cost-effectiveness ratio (ICER). Bootstrapping techniques (10,000 re-samples) were used to obtain the probabilistic ICER, its 95% percentile confidence interval (CI) and the CE acceptability curve. Univariate probabilistic sensitivity analysis was also performed. **RESULTS:** A total of 189 patients, 112 in PGB group and 77 in UC were identified. Compared with UC, PGB was associated with higher QALY gain; 0.0406 ± 0.0343 versus 0.0285 ± 0.0350 ($P = 0.598$). Although drug costs were higher for PGB (€262 ± 132 vs. €66 ± 66, $P < 0.001$), overall total costs (€1368 ± 1229 vs. €1258 ± 1474; $P = 0.587$), or health care costs (€628 ± 590 vs. €469 ± 420; $P = 0.134$) were similar, although due its observational design and small sample size, ICERs varied extensively from €5302 (95% CI: dominant; €144,105) for total costs to €14,381 (dominant; €115,648) for health care costs and €39,592 (dominant; €131,754) for drug costs. However, probabilistic analyses showed 79% to 84% of ICERs were below the threshold of €30,000/QALY. **CONCLUSIONS:** This study suggests that using PGB to treat refractory out-patients with pDPN in community medical practice in Spain is cost-effective compared to UC in majority of patients. It also highlights the burden of the disease and supports the availability of effective treatments available for patients not achieving pain relief from older therapies.

PDB54

COMPARISON OF TREATMENT COSTS BETWEEN BASAL-SUPPORTED ORAL THERAPY (BOT) WITH INSULIN GLARGINE (GLA) AND BOT WITH INSULIN DETEMIR (DET) IN PATIENTS WITH TYPE 2 DIABETES (T2D): ECONOMIC EVALUATION BASED ON THE RESULTS OF THE INSULIN GLARGINE (LANTUS®) VERSUS INSULIN DETEMIR (LEVEMIR®) TREAT-TO-TARGET (L2T3) STUDY

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OBJECTIVES: To compare, from the perspective of Statutory Health Insurance (SHI) in Germany, direct diabetes-related treatment costs (DTC) in T2D patients during the first year after initiation of a BOT with either of the long-acting insulin analogues GLA or DET, based on the results of a randomized controlled trial (RCT), the L2T3 study [1]. **METHODS:** According to the study protocol of the 24-week RCT, GLA was administered once daily, DET [2] twice daily. The respective insulin consumption was extrapolated to 52 weeks via logarithmic regression. Due to proof of non-inferiority in the L2T3 study, a cost-minimization analysis was conducted. DTC from the SHI perspective comprised insulin consumption, test strips, needles and lancets. In the base-case analysis, average values of all model parameters were applied. Taking a conservative approach, it was assumed that needles were changed daily (disadvantage for GLA). a new test strip and lancet were assumed for each blood glucose measurement. In comprehensive sensitivity analyses (impact analysis, analysis of extremes, Monte Carlo simulation), the robustness of the base-case results was tested. **RESULTS:** The base-case analysis revealed savings of €767 in annual DTC per patient when using BOT with GLA (€1141) compared to DET (€1908). Of these savings, €517 (67%) fell upon insulin, €214 (28%) upon test strips and €36 (5%) upon lancets. Savings in favour of GLA turned out to be robust in the sensitivity analyses. Price and insulin consumption of DET had the highest impact on these savings. **CONCLUSIONS:** Initiation of a BOT with GLA in T2D patients after failure of oral antidiabetic therapy alone may lead to substantial savings for SHI compared to BOT with DET. **ACKNOWLEDGMENT:** This study was supported by Sanofi-Aventis Deutschland GmbH, Berlin, Germany. [1] Swinnen et al. Diabetes Care 2010: doi:10.237/doc09–2294 [2] In the treatment of T2D, in combination with oral medications, it is recommended to use DET once daily.